We claim:

1. A method of forming a layer comprising:

mixing at least a first material and a second material to form a mixture;

depositing the mixture on a surface; and

polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent,

wherein a rate of polymerization of the mixture is greater than a rate of polymerization of the first material; and

wherein the rate of polymerization of the mixture is greater than a rate of polymerization of the second material.

2. The method of claim 1, wherein the polymerizing is a photo-polymerizing.

3. The method of claim 1, wherein the polymerizing is an electron beam polymerizing.

4. The method of claim 1, wherein the mixture has a liquid crystal phase.

5. The method of claim 1, wherein the mixture has a liquid crystal phase that is thermodynamically stable at room temperature.

6. The method of claim 1, wherein at least one of the first material and the second material has the formula B-S-A-S-B, wherein

A is at least one of a chromophore, an aromatic molecular core, a heteroaromatic molecular core, or a rigid molecular core with conjugated pi-electron bonds,

S is a spacer, and

B is an endgroup which is susceptible to photopolymerization.

7. The method of claim 1, wherein the polymer network has a uniform structure.

8. The method of claim 7, wherein the polymer network has a uniform thickness.

9. The method of claim 1, wherein the polymer network is included in one of a semiconductor device, a display device, and a thin film transistor device.

10. The method of claim 1, wherein the surface is an alignment layer that is not rubbed.

11. A method of forming a layer comprising:

mixing at least a first material and a second material to form a mixture;

depositing the mixture on a surface; and

polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent,

wherein an amount of energy per unit of mass used for polymerizing the mixture is less than an amount of energy per unit of mass used for polymerizing of the first material; and

wherein the amount of energy per unit of mass used for polymerizing of the mixture is less than an amount of energy per unit of mass used for polymerizing of the second material.

12. The method of claim 11, wherein the polymerizing is a photo-polymerizing.

13. The method of claim 11, wherein the polymerizing is an electron beam polymerizing.

14. The method of claim 11, wherein the mixture has a liquid crystal phase.

15. The method of claim 11, wherein the mixture has a liquid crystal phase that is thermodynamically stable at room temperature.

16. The method of claim 11, wherein at least one of the first material and the second material has the formula B-S-A-S-B, wherein

A is at least one of a chromophore, an aromatic molecular core, a heteroaromatic molecular core, or a rigid molecular core with conjugated pi-electron bonds,

S is a spacer, and

B is an endgroup which is susceptible to photopolymerization.

17. The method of claim 11, wherein the polymer network has a uniform structure.

18. The method of claim 17, wherein the polymer network has a uniform thickness.

19. The method of claim 11, wherein the polymer network is included in one of a semiconductor device, a display device, and a thin film transistor device.

20. The method of claim 11, wherein the surface is an alignment layer that is not rubbed.

21. A method of forming a layer comprising:

mixing at least a first material and a second material to form a mixture;

depositing the mixture on a surface; and

polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent,

wherein a power level used for polymerizing the mixture is less than a power level used for polymerizing of the first material; and

wherein the power level used for polymerizing of the mixture is less than an a power level used for polymerizing of the second material.

22. The method of claim 21, wherein the polymerizing is a photo-polymerizing.

23. The method of claim 21, wherein the polymerizing is an electron beam polymerizing.

24. The method of claim 21, wherein the mixture has a liquid crystal phase.

25. The method of claim 21, wherein the mixture has a liquid crystal phase that is thermodynamically stable at room temperature.

26. The method of claim 21, wherein at least one of the first material and the second material has the formula B-S-A-S-B, wherein

A is at least one of a chromophore, an aromatic molecular core, a heteroaromatic molecular core, or a rigid molecular core with conjugated pi-electron bonds,

S is a spacer, and

B is an endgroup which is susceptible to photopolymerization.

27. The method of claim 21, wherein the polymer network has a uniform structure.

28. The method of claim 27, wherein the polymer network has a uniform thickness.

29. The method of claim 21, wherein the polymer network is included in one of a semiconductor device, a display device, and a thin film transistor device.

30. The method of claim 21, wherein the surface is an alignment layer that is not rubbed.

31. A method of forming a layer comprising:

mixing at least a first material and a second material to form a mixture;

depositing the mixture on a surface; and

polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent,

wherein a time used for polymerizing the mixture is less than a time used for polymerizing of the first material; and

wherein the time used for polymerizing of the mixture is less than a time used for polymerizing of the second material.

32. The method of claim 31, wherein the polymerizing is a photo-polymerizing.

33. The method of claim 31, wherein the polymerizing is an electron beam polymerizing.

34. The method of claim 31, wherein the mixture has a liquid crystal phase.

35. The method of claim 31, wherein the mixture has a liquid crystal phase that is thermodynamically stable at room temperature.

36. The method of claim 31, wherein at least one of the first material and the second material has the formula B-S-A-S-B, wherein

A is at least one of a chromophore, an aromatic molecular core, a heteroaromatic molecular core, or a rigid molecular core with conjugated pi-electron bonds,

S is a spacer, and

B is an endgroup which is susceptible to photopolymerization.

37. The method of claim 31, wherein the polymer network has a uniform structure.

38. The method of claim 37, wherein the polymer network has a uniform thickness.

39. The method of claim 31, wherein the polymer network is included in one of a semiconductor device, a display device, and a thin film transistor device.

40. The method of claim 31, wherein the surface is an alignment layer that is not rubbed.

41. A method of forming a layer comprising:

mixing at least a first material and a second material to form a mixture;

depositing the mixture on a surface; and

polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent,

wherein a crosslink density of the mixture is greater than a crosslink density of the first material provided both the mixture and the first material are polymerized under the same conditions; and

wherein the crosslink density of the mixture is greater than a crosslink density of the second material provided both the mixture and the second material are polymerized under the same conditions.

42. The method of claim 41, wherein the polymerizing is a photo-polymerizing.

43. The method of claim 41, wherein the polymerizing is an electron beam polymerizing.

44. The method of claim 41, wherein the mixture has a liquid crystal phase.

45. The method of claim 41, wherein the mixture has a liquid crystal phase that is thermodynamically stable at room temperature.

46. The method of claim 41, wherein at least one of the first material and the second material has the formula B-S-A-S-B, wherein

A is at least one of a chromophore, an aromatic molecular core, a heteroaromatic molecular core, or a rigid molecular core with conjugated pi-electron bonds,

S is a spacer, and

B is an endgroup which is susceptible to photopolymerization.

47. The method of claim 41, wherein the polymer network has a uniform structure.

48. The method of claim 47, wherein the polymer network has a uniform thickness.

49. The method of claim 41, wherein the polymer network is included in one of a semiconductor device, a display device, and a thin film transistor device.

50. The method of claim 41, wherein the surface is an alignment layer that is not rubbed.

51. A charge-transporting or luminescent layer comprising:

a mixture of at least a first and second material on an alignment layer that is unrubbed, the mixture being capable of forming a polymer network that is at least one of charge-transporting or luminescent.

52. The layer of claim 51, wherein alignment layer is a photo-alignment layer.

53. The layer of claim 51,

wherein the mixture has a polymerization rate greater than a polymerization rate of the first material; and

wherein the mixture has a polymerization rate greater than a polymerization rate of the second material.

54. The layer of claim 51,

wherein an amount of energy per unit of mass to polymerize the mixture is less than an amount of energy per unit of mass to polymerize the first material; and

wherein the amount of energy per unit of mass to polymerize the mixture is less than an amount of energy per unit of mass to polymerize the second material.

55. The layer of claim 51,

wherein a power level to polymerize the mixture is less than a power level to polymerize the first material; and

wherein the power level to polymerize the mixture is less than an a power level to polymerize the second material.

56. The layer of claim 51,

wherein a time to polymerize the mixture is less than a time to polymerize the first material; and

wherein the time to polymerize of the mixture is less than a time to polymerize the second material.

57. The layer of claim 51, wherein the mixture is photo-polymerizable.

58. The layer of claim 51, wherein the mixture has a liquid crystal phase.

59. The method of claim 51, wherein the mixture has a liquid crystal phase that is thermodynamically stable at room temperature.

60. The method of claim 51, wherein at least one of the first material and the second material has the formula B-S-A-S-B, wherein

A is at least one of a chromophore, an aromatic molecular core, a heteroaromatic molecular core, or a rigid molecular core with conjugated pi-electron bonds,

S is a spacer, and

B is an endgroup which is susceptible to photopolymerization.

61. The layer of claim 51, mixture has a uniform thickness.

62. The layer of claim 51, wherein the polymer network is included in one of a semiconductor device, a display device, and a thin film transistor device.

63. A charge-transporting or luminescent layer comprising:

a polymer network that is at least one of charge-transporting or luminescent,

wherein the polymer network is on an alignment layer that is unrubbed.

64. The layer of claim 63, wherein alignment layer is a photo-alignment layer.

65. The layer of claim 63, wherein the polymer network has a liquid crystalline structure.

66. The layer of claim 63, wherein the polymer network includes at least one repeat unit having the formula B-S-A-S-B, wherein

A is at least one of a chromophore, an aromatic molecular core, a heteroaromatic molecular core, or a rigid molecular core with conjugated pi-electron bonds,

S is a spacer, and

B is an endgroup which is susceptible to photopolymerization.

67. The layer of claim 63, the polymer network has a uniform structure.

68. The layer of claim 63, wherein the polymer network has a uniform thickness.

69. The layer of claim 68, wherein the polymer network has few dangling radical and molecular fragments.

70. The layer of claim 63, wherein the polymer network is included in one of a semiconductor device, a display device, and a thin film transistor device.